COMTROL®

ETHERNET SWITCH

RocketLinx™ ES8509-XT

Part Number: 32065-4

KEY FEATURES AND BENEFITS::

- 9-Port fully managed industrial grade Gigabit switch
- Nine Gigabit ports: 4 10/100/1000BASE-TX RJ45 ports and 5 Gigabit combo (RJ45/SFP 10/100/1000BASE-TX, 100BASE-FX, 1000BASE-X) ports
- 32G switch fabric, 8K MAC address ensuring high quality data transmission
- Advanced features including: private VLAN, VLAN, GVRP, QoS, IGMP snooping V1/V2/V3, rate control, port trunking, LACP, online multi-port mirroring
- Comprehensive security features supporting IP security, port security, DHCP server, IP and MAC binding, 802.1x network access control
- Advanced network redundancy, Multiple Gigabit rings (recovery time <5ms), STP, RSTP, MSTP, and Rapid Dual Homing
- Multiple management methods; Command Line Interface (CLI) using the console port or Telnet/SSH, Web (HTTP/HTTPS), or NetVision
- Event notification by email, SNMP trap, syslog, digital input and relay output
- Dual redundant 10.5 - 60VDC power inputs for enhanced reliability
- -40° to +75°C operating temperature for extreme environments and NEMA TS2 compliant
- Rigid aluminum IP31 housing, excellent heat dispersion, DIN rail/ wall-mount installation
- IPV6 support

PRODUCT DESCRIPTION ::

The RocketLinx ES8509-XT is a managed industrial Ethernet switch that brings the speed of nine full Gigabit Ethernet ports together with the flexibility of five DDM capable SFP fiber communication ports in a managed, wide-temperature rated switch ideal for traffic and industrial-grade networks. The combination of Gigabit copper and SFP ports along with advanced management capabilities such as IGMP snooping, LACP, 256 VLAN support, multiple redundant ring configuration, and extensive security features places the RocketLinx ES8509-XT in a class by itself for meeting the high-bandwidth, wide-area requirements of the most demanding industrial network infrastructures.

The RocketLinx ES8509-XT is housed in a rugged aluminum enclosure featuring an excellent heat dispersing design supporting a wide operating temperature that meets NEMA TS2 standards. The embedded software supports full Layer 2 management features, multi-form ring redundancy, network control, monitoring, security, and notification. The RocketLinx ES8509-XT also includes a built-in watchdog timer and digital input and relay output for event notification and problem alerts. The RocketLinx ES8509-XT provides the perfect foundation for building your industrial Ethernet or traffic and transportation network.

Five Gigabit SFP Ports for Flexible Network Planning
A unique feature of the RocketLinx ES8509-XT is the five Gigabit RJ45/SFP combo ports, which can improve performance dramatically compared to products with fewer Gigabit RJ45/SFP ports. Each combo comes with a flexible connection, as well as fiber or copper connection options. By selecting the appropriate fiber transceivers, the RocketLinx ES8509-XT offers the flexibility to meet your industrial application requirements with virtually any transmission distance.

NEMA TS2

EXTENDED TEMPERATURE RATINGS

ROCKETLINX SPECIFICATIONS ::

HARDWARE

Network Interfaces
10/100/1000BASE-TX, 100BASE-FX
1000BASE-SX/LX/LHX/XD/ZX Gigabit Fiber

Connector Type
4 - RJ45
5 - SFP

Enclosure
IP31 grade aluminum metal case, drop-waterproof and dustproof

Installation Method DIN rail

LED Indicators
Power 1, Power 2, system status
ring, digital input, digital output
RJ45 link/activity and link speed
SFP port link/activity and link speed

Digital Input (DI)
One DI, 4-Pin screw terminal block

Digital Output (DO)
One DO (Dry Relay Output), 4-Pin screw terminal block

Serial Console Port
One RJ45 RS-232 (TXD, RXD, Signal GND), Baud Rate: 9600bps

Data Bits	8
Parity	None
Stop Bits	1
Flow Control	None
Dimensions	5.0" x 6.3" x 3.7" 12.7 x 16 x 9.4 cm
Product Weight	2.9 lbs 1.32 kg

ETHERNET SPECIFICATIONS

Number of Ports 9
4 RJ45 and 5 combo (RJ45/SFP)

RJ45
10/100/1000BASE-TX, auto MDI/MDIX, auto-negotiation (speed/duplex mode)

SFP (Optional)
100BASE-FX Fiber, 1000BASE-SX/LX/LHX/XD/ZX
auto MDI/MDIX, auto-negotiation (speed/duplex mode)

Cable Types
Cat 3, Cat 4, Cat 5, Cat 5e, Cat 6 (UTP or STP)

Link Distances
RJ45: 100 Meters
SFP: depends on model: Single-Mode: 30KM, Multi-Mode: 2KM

Port Alarm Relay Yes

Standards
IEEE 802.1AB: Link Layer Discovery Protocol (LLDP)
IEEE 802.1D-2004: Rapid Spanning Tree Protocol (RSTP)
IEEE802.1p: Class of Service
IEEE 802.1Q-2003: VLAN Tagging and GVRP
IEEE 802.1s: Multiple Spanning Tree Protocol (MSTP)
IEEE 802.1X: Port Based Network Access Control
IEEE 802.3: 10BASE-T
IEEE 802.3ab: 1000BASE-TX
IEEE 802.3ad: Port Trunking with Link Aggregation Control Protocol (LACP)
IEEE 802.3u: 100BASE-TX Fast Ethernet and !00BASE-FX Fast Ethernet Fiber
IEEE 802.3x: Flow Control and Back-Pressure
IEEE 802.3z: Gigabit Ethernet Fiber
IEEE 1588: Precision Time Protocol (PTP)

MANAGEMENT FEATURES

Configuration and Monitoring
Out-band management: Console port with Command Line Interface (CLI) - similar to Cisco CLI, in-band management: web interface (HTTP/HTTPS) or a Telnet/SSH console with CLI

Embedded Watchdog
Embedded hardware watchdog timer automatically resets system if switch system failure occurs

System Upgrade/Backup
Provides TFTP/Web interface for firmware upgrade and configuration backup/restore

SNMP
V1, V2c, V3 with SNMP trap function, up to four trap stations

SNMP MIB
MIB-II, Bridge MIB, VLAN MIB, IGMP MIB, Ethernet-like MIB, Comtrol private MIB, and RMON

Email Warning
Automatic warning, up to four accounts by pre-defined events

System Log
Supports both local mode and server mode

DHCP
DHCP client, DHCP server with IP and MAC address binding, port-based DHCP server configuration and DHCP relay agent (Option 82)

NETWORK PERFORMANCE

Back Pressure
IEEE 802.3x 10/100Mbps Half-Duplex only

Class of Service (CoS)
IEEE 802.1p 4 priority queues/port

Flow Control Pause Frame
IEEE 802.3x 10/100/1000Mbps Full-Duplex

GMRP
GARP Multicast Registration Protocol

IGMP Snooping
V1/V2/V3 for multicast filtering and IGMP query V1/V2; supports unknown multicasting, processes forwarding policies: drop, flooding and forward to router port

IP Security
Assign authorized IP addresses to specific port, 10 max/port

Loop Protection
Provides Layer 2 loop prevention through the STP, RSTP, and MSTP. Loop protection increases the efficiency of STP, RSTP and MSTP by preventing ports from moving into a forwarding state that would result in a loop in the network.

Modbus TCP/IP
CLI support for Modbus TCP/IP communications with Function Code 4 (factory automation). Operates as slave/server device, while a typical master/client device is a host computer running appropriate through Ethernet. The Modbus TCP/IP master can read or write to the Modbus registers provided by the Modbus TCP/IP. Application software (SCADA/HMI System)

Packet Buffer Memory 1Mbits

Port-Based Network Access Control
IEEE 802.1X: supports user authentication by the RADIUS account, password and key for the RADIUS severs (Primary and Secondary)

Port Configuration
Port link speed, link mode, port status, enable/disable

Port Mirroring
Online traffic monitoring on multiple selected ports

Port Security
Assign authorized MAC addresses to specific port, 10 max/port

Port Trunk
IEEE 802.3ad LACP with timer and static port trunk; trunk member up to 8 ports and maximum 4 trunk groups including Gigabit Ethernet ports

Private VLAN
Direct client ports in isolated/community VLAN to promiscuous port in primary VLAN

Rate Control
Ingress filtering for broadcast, multicast, unknown DA or all packets. Egress filtering for all packet types

Switch Technology
32Gbps switch fabric, store and forward switch technology, 8K MAC address

System Throughput
26 mega packets/second, 64 byte packet size, 14,880pps - 10Mbps; 148,800pps - 100Mbps; 1,488,100pps – 1000Mbps, max packet size 1632

Time Synchronization
Supports IEEE 1588, NTP protocol with daylight saving function, and localized time sync function

Traffic Prioritization (QoS)
Supports 4 physical queues, weighted round robin queuing (WRR 8:4:2:1) and strict priority scheme (IEEE 802.1p COS tag and IPv4 ToS/ diffserv information) to prioritize industrial network traffic

VLAN
IEEE 802.1Q Tag VLAN with 256 (Max) VLAN entries, 2K GVRP Entries; 3 VLAN link modes: trunk, hybrid, and link access
IEEE802.1 QinQ supports double VLAN tag function for implementing metro network topologies

NETWORK REDUNDANCY

Rapid Spanning Tree Protocol
IEEE 802.1D-2004 Rapid Spanning Tree Protocol (RSTP): Compatible with legacy STP and IEEE 802.1w

Multiple Spanning Tree Protocol
IEEE 802.1s MSTP: Each MSTP instance can include one or more VLANs

Redundant Ring Technology
Failure Recovery within 5ms
Rapid Dual Homing
Multiple uplink paths to upper switches
Ring Trunking
Integrates port aggregate function in ring path to get higher throughput ring architecture
Multiple Ring
Couple or multiples of up to 16 rapid super rings, supports Up to 4 Gigabit rings in one switch

ELECTRICAL SPECIFICATIONS

Device

DC Input Voltage (Positive or Negative)	10.5-60VDC
Current Consumption (+24VDC)	1A
Power Consumption (Max)	24W

Number of Power Connectors 1

Power Connector Type
4-Pin screw terminal block

Power Input Redundancy
Dual redundant inputs

Reverse Polarity Protection Yes

Digital Input
1 with photo optical isolation

Logic Low (0)	0 to 10VDC
Logic High (1)	11 to 30VDC

Digital Output (Relay Output) 1

DC input voltage	30VDC
Current consumption (30VDC)	1A Maximum

Multi-Event Relay Feature
Power, port link, DI/ring status change, ping reset, or perform routing relay on/off function

ENVIRONMENTAL SPECIFICATIONS

Air Temperature

System On	-40° to 75° C
System Off	-40° to 85° C

Operating Humidity
Non-condensing 5% to 95%

MTBF (Mean Time Between Failures) 28.53 years

EXPORT INFORMATION

Packaged Shipping Weight	3.9 lbs 1.77 kg
Package Dimensions	11.3" x 5.5" x 9.1" 28.7 x 13.97 x 23.11 cm
UPC Code	7-56727-32065-4
ECCN	5A992
Schedule B Number	8517.62.0050

REGULATORY APPROVALS

Emissions
Canadian EMC Requirements
ICES-003
European Standard EN55022
CISPR 22
FCC Part 15 Subpart B
Class A limit

Immunity
European Standard EN55024
IEC 1000-4-2/EN61000-4-2: ESD
IEC 1000-4-3/EN61000-4-3: RF
IEC 1000-4-4/EN61000-4-4: Fast transient/burst
IEC 1000-4-5/EN61000-4-5: Surge
IEC 1000-4-6/EN61000-4-6: Conducted disturbance
IEC 1000-4-8/EN61000-4-8: Magnetic field
IEC 1000-4-11/EN61000-4-11: DIPS and voltage variations

Safety
IEC 60950/EN60950 (LISTED)
CSA C22.2 No. 60950/UL60950 Third Edition

Other
European Standard: 2002/95/EC Directive (RoHS)
NEMA TS2 Certified

Regulatory Approvals

RoHS CE c UL us LISTED

RECOMMENDED PRODUCTS ::

32103-3	PS1040, 40 Watts Industrial DIN Rail Power Supply (24V, 40W, DIN Rail)
1200059	SFP, Multi-Mode, 1000BASE-GSX (Extended Temperature)
1200060	SFP, Single-Mode, 1000BASE-GLX (Extended Temperature)
1200061	SFP, Single-Mode, 1000BASE-GLHX (Extended Temperature)
1200055	LC-ST Fiber Adapter Cable Multi-Mode
1200056	LC-ST Fiber Adapter Cable Single-Mode

COMTROL®

Warranty Information
Comtrol offers a 30-day satisfaction guarantee and 5-year limited warranty.

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